Careers in Science and Math Education - NASC 192

Winter 2019
Mondays 9:10 – 10:00 am
Location: Chemical Sciences Skye Hall 170
Instructor: Dr. Jack Eichler, CS 220, jack.eichler@ucr.edu

Course Goals: The broader goals of this seminar course are two-fold: 1) Encourage you to think about the science of learning and introduce you to pedagogical tools designed to help improve student learning in STEM classrooms; and 2) Introduce you to issues related to assessment in the California secondary education system, and how your approaches to teaching will fit within this framework.

Course Schedule:

Jan 7 Introductions, course goals, and objectives
Activity: Think-Pare-Share/Five Fundamental Ideas on Learning

Jan 14 Student Discourse Part I; dialogic vs. authoritative discussion
Activity: Analysis of classroom transcript

Jan 21 Student Discourse Part II; eliciting conceptual understanding
Activity: Virtual lab demo – melting ice

Jan 28 Analysis of student discussion
Activity: Analysis of ATLAS classroom video footage
Assignment 1: Written analysis of student discussion in ATLAS classroom

Feb 4 Active Learning Part 1; accessing prior knowledge and developing new conceptual understanding
Activity: Discovery learning and student misconceptions - phases of the moon interactive demonstration

Feb 11 Active Learning Part 2
Activity: Discovery learning and student misconceptions - in-class response systems (clickers) and calculating probability

Feb 18 Analysis of active learning
Activity: Analysis of ATLAS classroom video footage
Assignment 2: Written analysis of active learning and evidence of student learning

Feb 25 Common Core and NGSS (Next Generation Science Standards)
Activity: Turn and Talk/How will your class learning objectives be influenced by Common Core/NGSS?

Mar 4 Analysis of NGSS/common core ideals in classrooms
Activity: Analysis of ATLAS classroom video footage
Assignment 3: Written analysis of NGSS/common core implemented in a real classroom

Mar 11 Guest speakers from Riverside Poly HS; implementation of NGSS and Common Core in the real world.
Grading

Attendance: 50 points (5 points each session)
Assignment 1: 150 points
Assignment 2: 150 points
Assignment 3: 150 points

450-500 points = A
430-499 = B+
400-429 = B
375-399 = C+
350-374 = C
250-349 = D
< 250 = F

Assignments – Detailed instructions for each writing assignment will be distributed separately prior in lecture.

Class attendance: Attendance will be taken each week. Absences will not be excused unless a valid documented excuse can be provided (hospitalization that prevents attendance or death in the immediate family). Attendance will be taken at the beginning of lecture. If you arrive late after the attendance has been taken this will count as an absence.